

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KARL W. HAIDER, JOHN W. FRINK, HEBER D. LAYTON,
PETER H. MARKUSCH, JAMES W. ROSTHAUSER, BONNIE L. LAWSON
and MICHAEL A. JOSEPH

Appeal No. 96-1641
Application No. 08/225,036¹

ON BRIEF

Before GARRIS, OWENS and LIEBERMAN, Administrative Patent Judges.

LIEBERMAN, Administrative Patent Judge.

¹ Application for patent filed April 8, 1994.

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DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-13 which are all of the claims in the application.

THE INVENTION

Appellants' invention is drawn to a polyisocyanate binder containing the reaction product of at least one polyol and a polyisocyanate mixture made up of from about 50 to about 60% by weight of polyphenyl polymethylene polyisocyanate and from about 40 to about 50% by weight of an isomer mixture of diphenylmethane diisocyanate containing about 4 to about 30% by weight of the 2,4' isomer and about 70 to about 96% by weight of the 4,4' isomer. The binder may be used in a process for bonding lignocellulose materials by coating the raw material with the prepolymer followed by reacting and curing the mixture at elevated temperature. Claim 1 is illustrative and reads as follows:

1. A polyisocyanate binder for lignocellulose-containing raw materials having a viscosity of less than 1500 cps at 25°C prepared by reacting

a) a polyisocyanate mixture made up of

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1) from about 50 to about 60% by weight, based on total weight of a), of polyphenyl polymethylene polyisocyanate,

2) from about 40 to about 50% by weight, based on total weight of a), of an isomer mixture of diphenylmethane diisocyanate which includes

i) from about 4 to about 30% by weight, based on a)2), of 2,4'-diphenylmethane diisocyanate and

ii) from about 70 to about 96% by weight, based on a)2), of 4,4'-diphenylmethane diisocyanate and

b) at least one polyol having from about 1 to 8 hydroxyl groups and a molecular weight of from about 62 to about 6000 in amounts such that the ratio of equivalents of hydroxyl groups to equivalents of isocyanate groups is from about 0.001:1.0 to about 0.20:1.0.

THE REFERENCES

The references of record relied upon by the examiner are:

Horacek et al. (Horacek)	4,546,039	Oct.
8, 1985		
Watts et al. (Watts)	5,070,114	Dec. 3,
1991		

THE REJECTIONS

Claims 1 to 12 stand rejected under 35 U.S.C. § 102(b) as anticipated by Watts.

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Claims 1 and 13 stand rejected under 35 U.S.C. § 102(b)
as anticipated by Horacek.

Claims 2 to 12 stand rejected under 35 U.S.C. § 103(a) as
unpatentable over Horacek.

OPINION

The Watts Reference

Initially, we note that the claims of this rejection
stand or fall together. See appellants' Brief, p. 3, section
VII A. Accordingly, we will limit our discussion to one
claim, specifically, claim 1.

We have carefully considered all of the arguments
advanced by appellants and the examiner. We will sustain the
rejection of claims 1-12 under 35 U.S.C. § 102(b) as
anticipated by Watts for the reasons of record set forth by
the examiner in the Answer and Supplemental Examiner's Answer,
papers numbered 11 and 13, dated 09/06/95 and 02/02/96
respectively. Our remarks are added for emphasis.

Appellants have argued in their Brief, paper no. 10, page
3, lines 24 and 25, that the claimed polyphenyl polymethylene

polyisocyanate mixture must have an isocyanate functionality of 3 or higher. However, they fail to explain their position. The claims before us are devoid of any requirement that the polyphenyl polymethylene polyisocyanate have an isocyanate functionality which is 3 or higher. Indeed, the terminology used by appellants in defining this component, "polyisocyanate" requires only a functionality of two or more. Our conclusion is in part based upon a comparison of the term, "polyisocyanate," with the term, "diisocyanate" having a specific functionality of two. Our position is further supported by the teachings of Watts at column 6, lines 54 to 56 wherein patentee's polymeric MDI, corresponding to polyphenylpolymethylene polyisocyanate has a described functionality of, "greater than two." We accordingly, find that appellants' invention as set forth in claim 1 requires polyphenyl polymethylene polyisocyanate having a functionality of two or more. It follows that appellants' invention can have an average isocyanate functionality in the range of 2.0 to 2.3 as encompassed by the instant claimed invention and required by Watts, abstract, column 2, lines 36-39 and claim 1. Our position is further supported by the teaching of Watts

in claim 6 that the "diphenylmethane diisocyanate-containing composition contains from 35 to 65% by weight of polymethylene polyphenylene polyisocyanate having isocyanate functionalities of 3 or more." The teaching of polymethylene polyphenylene polyisocyanate with a functionality substantially exceeding the minimum required by appellants in claim 1, which is two or more supports our position that appellants' argument is not well founded.

Appellants have also argued that the difference in isocyanate group content of the reference and that of the present invention provides support for the proposition that Watts neither discloses nor anticipates the claimed binder composition, Brief, p. 3, last paragraph. However, as the claims before us do not require a minimum functionality except as defined by the term, "polyisocyanate," the isocyanate content cannot be so limited and construed in the manner suggested by appellants. The better construction of the scope of the claimed invention is that it reads on any isocyanate content wherein the isocyanate functionality is 2.0 or greater. Hence, appellants' claimed invention is inclusive of

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the isocyanate content required by Watts. We conclude that appellants' argument is again not well founded.

The Horacek reference

We next turn to the rejection of claims 1 and 13 as anticipated by Horacek under 35 U.S.C. § 102(b). We will sustain the rejection of claims 1 and 13. We adopt the findings of the examiner in the Answer that each of the required components are taught by Horacek. We add our own comments for emphasis.

Appellants have argued in their Reply Brief, at p. 3, that the binder composition of Horacek is distinguished based upon their own composition being primarily polyphenyl polymethylene polyisocyanate as contrasted with the optional presence of the same component in Horacek. A comparison of claims 1 and 13 with the teachings of Horacek does not support appellants' contentions. Claim 1 requires the presence of "from about 50 to about 60% by weight," of polyphenyl polymethylene polyisocyanate. Horacek specifically teaches in column 2, lines 1 to 3 and claim 1, line 17, "about 50 weight percent polyphenyl polymethylene polyisocyanate," meeting the

requirement of the claim. It is not clear whether the term, "about 50 weight," percent means predominantly polyphenyl polymethylene polyisocyanate as argued by appellants. It is clear however, that this component and others are present in amounts identically as much as required by appellants in their claim 1. Horacek teaches the use of 10 weight percent of 2,4' - diphenylmethane diisocyanate and 90 weight percent of 4,4' - diphenylmethane diisocyanate in column 2, lines 14-18 meeting appellants' requirement in claim 1 of 4 to about 30% by weight of 2,4' - diphenylmethane diisocyanate and 70 to 96% by weight of 4,4' - diphenylmethane diisocyanate.

We are not persuaded by appellants' characterization of polyphenyl polymethylene polyisocyanate as an "optional component" as negating anticipation in view of our previous discussion. Nor do we necessarily require exemplification to support a finding of anticipation. Our determination of anticipation is determined on the unique merits of each case. In the instant case, we are cognizant that the teachings of Horacek overlap in range the claimed invention. The overlapped teachings do not negate anticipation. It has been held, that, "the disclosure in the prior art of any value

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within a claimed range is an anticipation of the claimed range," Ex parte Lee, 31 USPQ2d 1105, 1106 (Bd. Pat. App. & Int. 1993). As we found in our above discussion, Horacek discloses specific values identical with and falling within the claimed range. Hence, we conclude that Horacek anticipates appellants' claimed invention.

Appellants' reliance on In re Meyer, 599 F.2d 1026, 202 USPQ 175 (CCPA 1979) and Ex parte Westphal, 223 USPQ 630 (Bd. App. 1983) as authority in support of their position is not persuasive. As discussed above, Horacek teaches both the general requirements of the claimed invention, and the specific limitations required by appellants' claimed invention. This degree of identity in disclosure is sufficient to meet the requirements of anticipation.

With respect to claim 13, it is sufficient to state that appellants' argument, that the binder of Horacek is different, is not persuasive in view of our findings above that the binder is the same.

The rejection of claim 13 as being unpatentable over Horacek under 35 U.S.C. § 103(a) was withdrawn by the examiner in Paper No. 12, the Supplemental Examiner's Answer.

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We next turn to the rejection of claims 2-12 as being unpatentable over Horacek under 35 U.S.C. § 103(a). Although appellants have not specifically stated whether the claims stand or fall together, we note that claims 2, 3, 4, 7, 8, 10 and 11 have been argued together by appellants, in their Reply Brief, p. 5, paragraph C, and each of the remaining claims have been separately argued. Accordingly, we shall consider claim 2 as representative of the first group of claims and consider each of the remaining claims individually. We affirm the rejection of claims 2 to 5 and 7 to 12 and reverse the rejection of claim 6.

Claim 2 requires the additional limitation wherein component a)2, "is present as 42%-46% by weight of the isocyanate mixture." We interpret the limitation of 42%-46% a)2 as requiring the reciprocal presence of 58%-54% of component a)1, i.e. the polyphenyl polymethylene polyisocyanate, to give meaning to the claim. Appellants argue that Horacek does not teach or suggest use of isocyanate mixtures in which more than 50% polyphenyl polymethylene polyisocyanate is present. We disagree. Both the specification and the claims of Horacek provide ample

motivation for the presence of more than 50% by weight of polyphenyl polymethylene polyisocyanate. Horacek at column 2, lines 1-2, and claim 1 provides for the presence of, "0 to about 50 weight percent polyphenyl polymethylene polyisocyanate(s)." This language suggests an amount of polyphenyl polymethylene polyisocyanate in excess of 50 weight percent. We find no reason to believe on the record before us that a composition having 54 weight percent polyphenyl polymethylene polyisocyanate would not have the same properties as a composition having 50 weight percent of the identical component. The proportions are so close that the person having ordinary skill in the art would have expected them to have the same properties. See Titanium Metals Corporation of America v. Banner, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985). Accordingly, we affirm the examiner as to the rejection of claims 2, 3, 4, 7, 8, 10 and 11.

We likewise affirm the rejection of claim 5. Claim 5 requires the presence of a polyol having 2 to 4 hydroxy groups and a molecular weight of from about 500 to about 5000. These limitation are encompassed by the teachings of Horacek at

column 1, lines 66 to 67. Upon comparison of these teachings with the limitations of claim 5, it is evident that appellants' prepolymers may be made from polyols having the same molecular weight and the same number of hydroxy equivalents present for each isocyanate.

We reverse the rejection of claim 6. The examiner has failed to show why a polyol having a molecular weight of between about 3500 and 4000 as claimed is rendered obvious by the teaching of Horacek whose polyols do not exceed a molecular weight of about 2000. The examiner's argument, in the Supplemental Examiner's Answer, p. 6, paragraph 4, is unpersuasive and not well taken, particularly as the Examiner's Answer contains numerous references throughout to molecular weight limitations in support of the examiner's position.

We affirm the rejection of claims 9 and 12. Horacek discloses polyols having a functionality of 2 to 8 and a molecular weight of about 62 to about 2000 at column 1, lines 66 to 67. Among the polyols taught at column 2, lines 23 to 37 are polyesters of phthalic or terephthalic acid, "with the above-mentioned polyols." The molecular weight taught by

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Horacek encompasses the hydroxyl numbers of claim 9 and renders them obvious. Although appellants have stated that the polyester polyols have outstanding properties, the record before us is devoid of any relevant comparative evidence showing unusual or unexpected results for the claimed polyester polyols as discussed below.

Although the specification before us contains comparative examples 9 through 16, the data contained therein are neither relevant nor persuasive of the issue at hand. Each of examples 9, which is compared to example 8, and 10 through 16 contain comparisons between unreacted polyisocyanates and reaction products thereof with various polyols including polyester polyols to form the claimed prepolymer. We find that the unreacted polyisocyanate comparative controls are not representative of the teachings of Horacek. Patentee, Horacek, requires the formation of a prepolymer by the reaction of polyisocyanate mixture with polyols in the same manner as appellants. Accordingly, no weight has been given to appellants' comparative examples.

As for claim 12 requiring a mixture of polyols we are unpersuaded by appellants' arguments. The disclosure of

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Horacek generally provides for the use of polyols. The paragraph at column 2, lines 24 to 37 further provides for polyesters, "resulting from reaction with the above-mentioned polyols." It would be unduly restrictive to interpret the teachings of Horacek as being limited to the use of only a single polyol in contrast to polyol mixtures. Furthermore, it is considered prima facie obvious to combine two polyols each of which is taught by Horacek to be useful for the same purpose, in order to form an isocyanate terminated prepolymer which is to be used for the very same purpose. In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

DECISION

The rejection of claims 1 to 12 under 35 U.S.C. § 102(b) as anticipated by Watts is affirmed. The rejection of claim 1 and 13 as anticipated by Horacek under 35 U.S.C. § 102(b) is affirmed. The rejection of claims 2 to 5 and 7 to 12 as unpatentable over Horacek under 35 U.S.C. § 103(a) is affirmed. The rejection of claim 6 as unpatentable over Horacek under 35 U.S.C. § 103 is reversed.

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No time period for taking any subsequent action in
connection with this appeal may be extended under 37 CFR
§ 1.136(a).

AFFIRMED

BRADLEY R. GARRIS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
TERRY J. OWENS)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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